

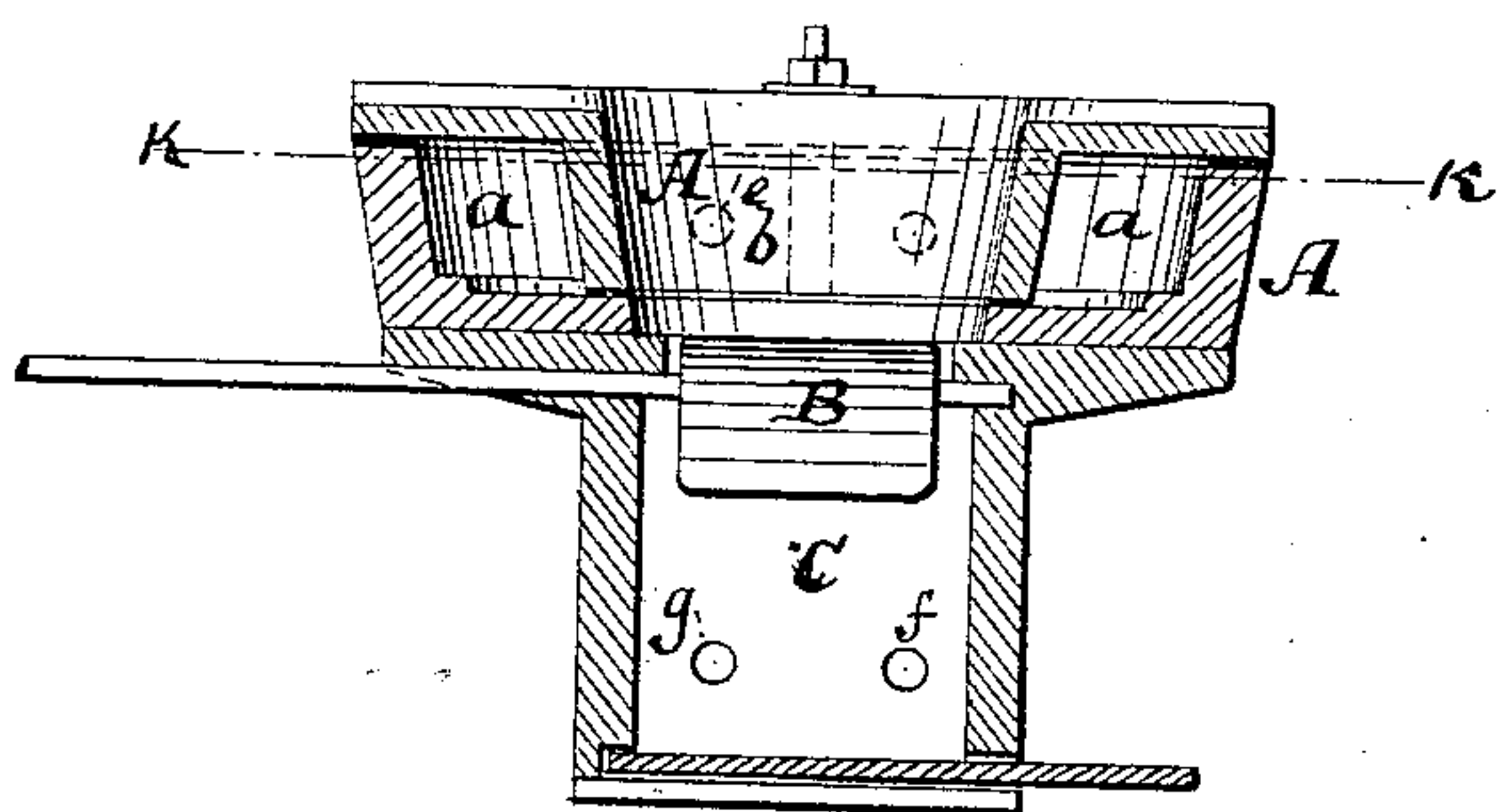
(No Model.)

H. D. KING.  
BLACKSMITH'S FURNACE.

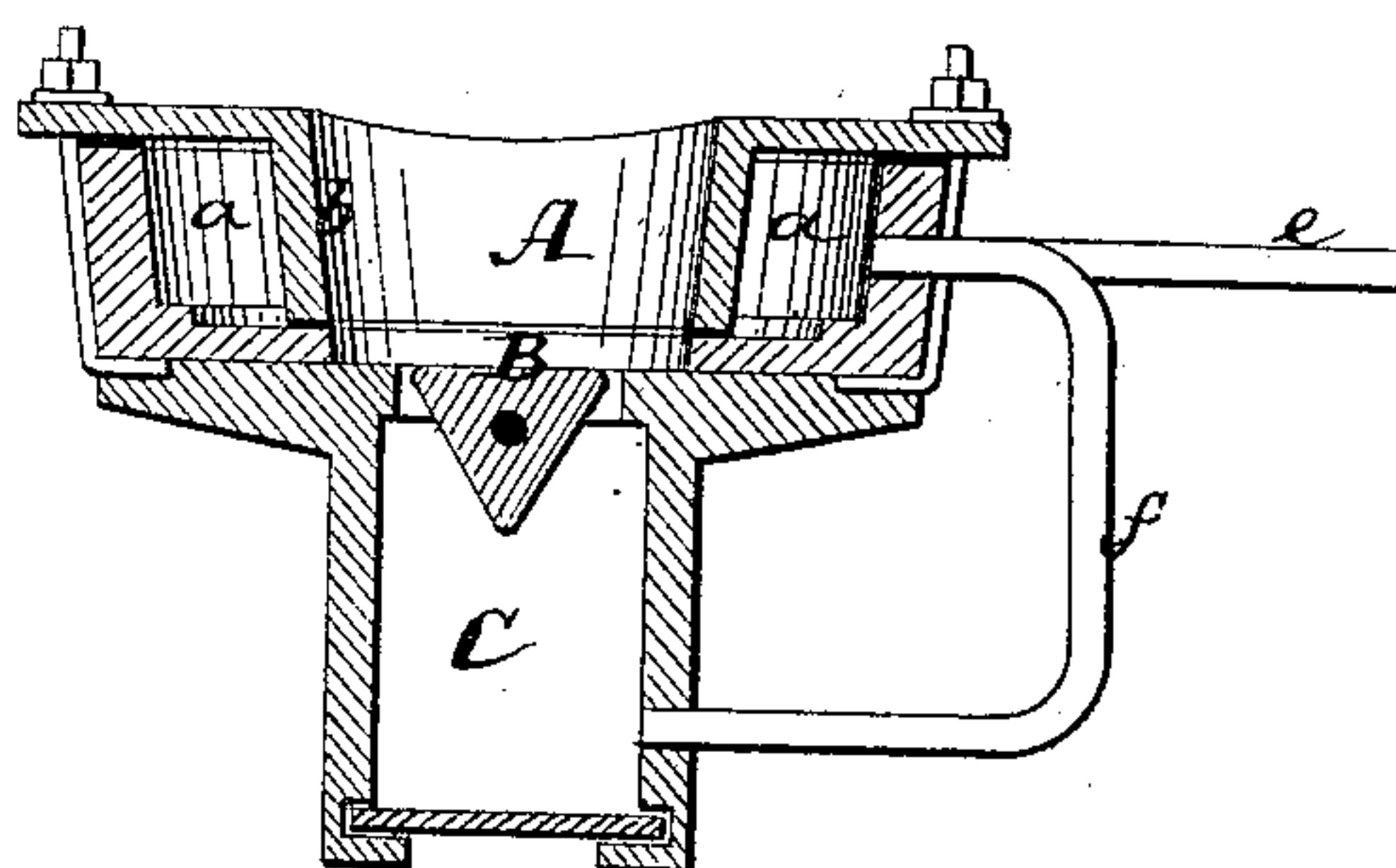
No. 353,686.

Patented Dec. 7, 1886.

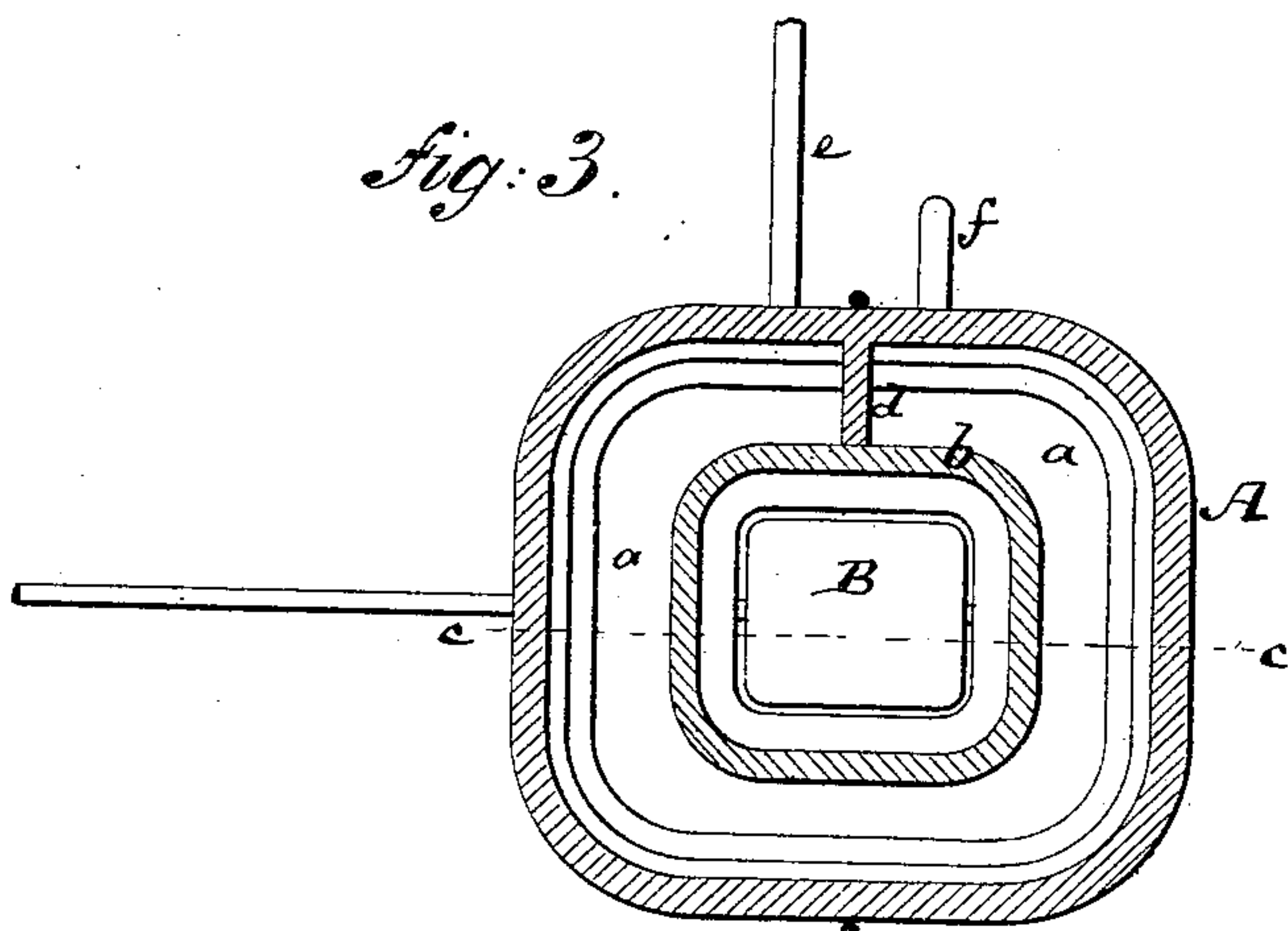
*Fig: 1.*



*Fig: 2.*



*Fig: 3.*



WITNESSES:

*John M. Speer.*  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

HUBBARD D. KING, OF HACKENSACK, NEW JERSEY.

## BLACKSMITH'S FURNACE.

SPECIFICATION forming part of Letters Patent No. 353,686, dated December 7, 1886.

Application filed July 24, 1886. Serial No. 208,921. (No model.)

*To all whom it may concern:*

Be it known that I, HUBBARD D. KING, a resident of Hackensack, in the county of Bergen and State of New Jersey, have invented an Improvement in Blacksmiths' Furnaces, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal section of my improved blacksmith's furnace, taken on the line *c c*, Fig. 3. Fig. 2 is a vertical cross-section of the same, taken at right angles to the line *c c*. Fig. 3 is a horizontal section on the line *k k*, Fig. 1.

This invention relates to a new construction of blacksmith's furnace, having for its object the preheating of the air that is blown by the bellows into the fire and the preservation of the fire-chamber.

The invention consists in surrounding the fire-chamber with an annular air-chamber having a transverse partition, said air-chamber being connected with the bellows, and also with the pit below the fire, as hereinafter more fully described.

In the drawings, the letter A represents the fire-chamber of the furnace. B is the grate or support for the fuel. C is the pit or chamber beneath the grate.

The fire-chamber A is hollow, containing an annular air-space, *a*, which surrounds the fire-wall *b*, and which, as Fig. 3 clearly represents, contains an inner transverse partition, *d*. The

pipe *e*, which connects with the bellows or air-supplying device, leads into one end of this air-chamber *a* near one side of the partition *d*, while the other end of said air-chamber, near the other side of said partition, connects by a pipe, *f*, with the pit C. Air blown through the pipe *e* will have to pass through the entire chamber *a* before it can escape by the pipe *f* into the pit C, whence it goes to the fire. During this passage the air is thoroughly heated before it gets to the fire, thereby causing a considerable saving in fuel. The air at the same time keeps the fire-wall *b* comparatively cool, thereby protecting the apparatus against rapid deterioration.

It is not absolutely necessary, although desirable, to pass all the air by the pipe *e* into the chamber *a*. Some of the air may from the bellows or other air-supplying device go directly by an aperture, *g*, into the pit C.

What I claim is—

In a blacksmith's furnace, the fire-chamber A, surrounded by the air-space *a*, having transverse partition *d*, in combination with the air-supply pipe *e*, and with the air-discharge pipe *f*, on opposite sides of said partition, the last-mentioned pipe leading from the air-passage *a* to the pit C, beneath the fire, as specified.

HUBBARD D. KING.

Witnesses:

CHARLES G. M. THOMAS,  
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